THE VETERINARY RECORD

A Weekly Journal for the Profession.

EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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THE CHRISTMAS EXAMINATIONS.

What intelligible reason is there for having an examination in December? The classes at every veterinary school are divided into A, B, and C, to each of which a different set of lectures are delivered. These lectures commence in October and the systematic course finishes in April or May. The only logical period at which examinations can be held is at the end, and not in the middle of a course. As a matter of expediency it may be argued that when a student is rejected in May he should have the opportunity of re-examination at as early a moment as possible. By Christmas he has had the benefit of three months' more study at College and the possibility of private study during the summer. If we are to officially recognise private study through the summer vacation we may at once widen our regulations and cease to require further attendance at College from rejected students. As to the further period of study at College—from October to December—it is deceptive. Only a portion of each subject is treated by the teachers, and more than likely the portion on which a student was rejected is that which is not referred to. This fact is tacitly recognised by the irregular efforts of the teachers to 'grind' and 'cram' those men going up at this untimely examination. Should the student have the misfortune to pass at the December examination (say from class A) he at once enters class B, and joins a course of instruction which has reached about half its extent. He may by dint of extra intelligence and the greatest assiduity work up that part of the subject which the class has passed, and by the end of the session be able to understand what the lecturer means. If he be only an average student he simply attends lectures in a state of mental confusion—unable to grasp the facts and explanations for want of the introductory knowledge given during the three months' he was not a member of the class. Next session he is able to start afresh and take advantage of the first part of the course, but then his examination comes, and unless he is crammed like a parrot he fails to satisfy his examiners. If this were the only evil we need not waste any pity, for the rejected student who has had the advantage of a direct and systematic course of teaching deserves little sympathy. The great evil, the great wrong which results from the Christmas examination is that it allows the schools to make January a time of entry for students. Clearly this is an injustice, for every young man who joins at that time of year commences studies in the middle of a course, and his whole collegiate training entails confusion. He commences each subject in the middle, finishes his first session with a view of the latter half of each subject, and then after a vacation of some months returns to qualify for examination by hearing the first half lectured on.

It may be expedient to allow men rejected for their 'final' to have another chance as early as possible; but it is illogical and unfair to permit either class A or B to be examined in December, and it is still worse to tolerate a system which permits students to enter college in the middle of a systematic course.

THE VOICE OF THE SCHOOLS.

It is rather remarkable that during the last three years when every practitioner has been interesting himself in questions of vital importance to the profession, when societies have been warmly discussing our position and our prospects, and when the members of the Body Corporate having shown by their votes that they are determined on change and bent on progress—it is remarkable, we say, how seldom the voice of the schools has been heard. The professors at our colleges are naturally recognised as leaders, and we look to them for light and leading. On some subjects their opinions are not only desirable—they are essential. It is impossible to make the best arrangements for examination of candidates for our diploma unless we have the assistance of the teachers. The quantity and quality of our examinations directly regulates the teaching at our schools, and alteration of one affects the other. Three years ago the Council tried to improve the Matriculation Examination and formally approved and carried a scheme. It was said to be impracticable and was suspended. The Council is supposed to enforce a matriculation, but it does not. It has delegated its duties to the schools, and fails even to supervise its deputed work. Soon the Council will have to consider our professional examinations, but prior to this we should know what the profession want, and what the schools approve. When the Council meet for an hour or two at Red Lion Square to transact business is not the time to discuss principles. This should be done months before, so that our ruling body might settle details and produce a practical working scheme. The essential requirements of the profession should be determined by the profession, and in matters where we come into intimate contact with the schools, the professors should give us the assistance of their voices. There are about twenty-five veterinary teachers, and how many have assisted by written or spoken word to elucidate the difficulties now before us?

Last week a printer's error caused us again to be guilty of extracting an article from a contemporary without acknowledgment. The article, "An Infectious Broncho-Pneumonia of American Oxen: The Corn Stalk Disease," by Professor Nocard, was translated for *The Journal of Comparative Pathology and Therapeutics*, from the December number of which journal we copied it.

CASES AND ARTICLES

CEREBRAL ABSCESS.

On November 11th, at 7 a.m., I was requested to attend a horse. Arriving, I find a fine four-year-old cart gelding trembling very much, greatly depressed, pulse 85 per minute and wiry; temperature 106°, and a very fœtid discharge from the near nostril. Enquiry elicited the fact that about a month previously an abscess had formed on the off shoulder, and although a large one, the swelling extending some way up the neck, it was allowed to mature, burst, and heal up of its own accord. About the 7th November a discharge was noticed from the nostril, and from the first was very yellow in colour and fœtid in odour. On a second visit the same day I formed the opinion that I had a case of pyœmia to deal with; that the discharge was not that of ordinary nasal gleet following on a cold, but a second abscess, and that absorption had taken place into the system.

Not to weary you with too much detail, I will briefly describe some of the symptoms presented from this day until the 21st, when death took place.

On the 12th, swelling of the off eyelids commenced, and continued to increase to the 15th, from which date it somewhat subsided, although it never disappeared. Discharge of a muco-purulent nature was very plentiful from this eye.

On the 16th complications ensued of a broncho pneumonic type. Extreme tenderness on percussion over the lumbar region, especially the off side, was continually present.

On the 18th a swelling commenced in the region of the poll, and although it never assumed any very large proportions, it continued to increase until death. The evidence of cerebral pressure became now more pronounced, and notwithstanding that the animal continued to feed and drink freely, I could not but give an unfavourable prognosis to the owner, and hazarded, on pressure, the opinion that lumbar and probably cerebral abscess had formed. The condition of the kidney was pretty evident on examination *per rectum*.

On the morning of the 20th the attendant found the horse laid in his box, propped against the wall (giving one the impression that he had fallen rather than laid down) in a completely comatose condition; the owner refusing to destroy him he remained in this condition for about thirty hours, never having once during this time ever struggled.

During this illness the temperature varied from 106° to 103°. The pulse from the 11th to the 17th gradually lost its harshness, and finally became less frequent, full and soft. My treatment consisted of laxatives, steaming nostrils and insufflating iodoform. I also gave hyposulphite sodæ and vegetable tonics until the cerebral pressure became more marked, when pot. iodide was substituted. On the 16th a smart cantharides liniment was applied to the chest which apparently gave considerable relief.

Post-mortem.—That well-known partly disintegrated condition of the tissues of the body generally in cases of pyœmia. Structure of right kidney almost entirely destroyed and replaced by a mass of purulent matter. Brain and membranes extremely congested (especially the plexus) with considerable serous effusion. An abscess containing about half-an-ounce of pus situated at base of brain and pressing on the bifurcation of the optic nerves.

A MEMBER.

A CALCULUS IN THE URETER OF A MARE.

The material which I herewith forward you is a portion of a mass weighing 9lbs. 7½ozs. which I found quite recently while removing some cobwebs from my anatomy in a horse slaughterer's yard. The subject of this abnormality was a very old cart mare which had been destroyed because incapable of further work. The position of the mass was halfway between the site of the kidney and the bladder, firmly attached to the wall of the abdomen and pelvis, the capsule it was enclosed in was very tough and the eighth part of an inch in thickness. It appeared to me to be the ureter enormously distended. There was but the slightest trace of a kidney having ever existed on that (the left) side. The right kidney was somewhat larger than usual. So far as I have been able to ascertain from previous owner, this to me very extraordinary collection of material had never interfered with the health or working capabilities of the mare.

If excuse is needed for troubling you with these details, it is the unusual position and its enormous size.

"ARRAY."

[The material received is a yellowish mass, which easily crumbles and is not crystalline. It is similar to deposits found in the bladder, and thus indicates the correctness of our correspondent's assumption that it was enclosed by a distended ureter.—ED.]

BREEDING TO TYPE.

A perusal of some articles on breeding horses in the Live Stock Journal Almanack suggests that the question of *breeding to type* might be usefully discussed. The Almanack contains articles on breeding the 'Hack Hunter,' the 'Pony,' Harness Horses' and 'Hunters.'

Perhaps it is hardly worth while discussing the hack-hunter. As a type it is not worth breeding, and we can trust to the misfits of other classes to meet the demand.

On pony breeding Lord Arthur Cecil writes with sound practical knowledge. His article does not concern itself with a show-yard pony, nor the handsome animal that is now so common in smart traps, nor with the polo-pony. He pleads for the encouragement of the native breeds of ponies which are to be found in many districts of a tolerably distinct type, *e.g.* the West Highland, Welsh, Exmoor, New Forest, and Shetland. His lordship indi-

cates how these breeds can be improved at little expense, without detracting from the natural courage and hardiness of the breeds. The advice in short is this—select your stallions from the pick of the local breed, castrate the male stock freely, and draft out the undesirable females. Follow the example of the Scotch sheep-farmers—"improve the stock on the ground without altering the type which Nature has declared most fitted for the place and circumstances in which the stock is found." There is only one sentence in Lord Arthur Cecil's article to which we take exception, and possibly we have misunderstood it. He says "interchange them one district with another." Surely this would destroy the type and leave us with *one* breed of ponies. The Welsh and the Shetland are too distinct and valuable to be merged into the mixed type, which could take the place of neither of the original breeds.

Before leaving the subject of ponies there are two sources of danger to the breed which require attention. Some years ago a "roaring" pony was almost unknown. Since we have introduced thoroughbred blood into his veins to get polo and racing animals, roaring is more often found, and we have only to go on breeding from unsound sires to disseminate this unsoundness amongst our best quality cobs and ponies. The second danger results from the dirty trick of buying foreign ponies and taking them to well-known districts from which they are sold as the genuine local article. Even if none remain to cross the breed, discredit is brought upon the district unless the imported animals are extra good ones.

The article on 'Breeding Harness Horses' is by Mr. Walter Gilbey, who holds that our modern harness horses are fewer in number and inferior in quality to those of former times. This is open to doubt, as there is now a much bigger demand for the better class harness horse than existed in the times of our fathers. The type of animal is also changed in accordance with the weight and build of modern carriages. We want them lighter, and with more quality than was suitable in former times. With one of Mr. Gilbeys remarks there will be no dissent—"wherever one goes, it is rare to see a justly-proportioned, really handsome and well-matched pair which can claim with truth to be of English origin," Unfortunately it may be added that more than half the good looking well-matched pairs are distinctly imported horses. If you want a good English single-harness horse it can be found, but if you want two which match in height, colour, form and action, so as to make a pair, you may search about for a year before you get them. Dealers must have pairs, and must be able to sell them at a reasonable price. Most buyers have eyes to see when two horses match, but very few know so much about conformation and character as to be able to distinguish between English and foreign horses; hence it is that matched pairs are now mostly imported. The question is—Why are foreign horses more easily matched than English? In venturing an answer I must confess to no special knowledge, and to founding my opinion upon what I see here, but only upon what I have heard from abroad. Here harness-horse-breeding is simply a fluke—the results depending upon convenience instead of selection in the use of sire and dam. No *principles* of breeding are acted upon, and no attempt is made to form or maintain a type. Horses are produced, and sorted out afterwards according to their fitness for the class of work required. Naturally misfits predominate. During the last few years, by the establishment of Stud books and the rivalry generated by shows where special prizes are given for distinct breeds, we have the commencement of a system which will probably result in the formation of distinct types suitable for the practical requirements of the country. The Cleveland Bay, the Yorkshire Coach-horse, and the Hackney, ought between them to produce the harness-horses we want, but it is not easy to see how mixing any of these with light-vanners, or old farm mares is going to do more than perpetuate the breeding of mongrels, from amongst which perhaps one in ten is good enough for a London carriage, and one in twenty worth breeding from again. "Good sized, roomy mares, possessing quality and having neat, game heads which denote courage, silky mane, sloping shoulders and true well-delivered action" says Mr. Gilbey should be put to a Hackney Sire, and "from such an alliance it is certain that excellent sizeable harness-horses may be produced." Very likely, but these mares are scarce, and when nothing is known of their pedigree most uncertain and disappointing. Mr. Gilbey illustrates this article by two plates showing the sort of pairs he would like—a pair of grays and a pair of bays. Every one will admire both pairs, and the bays are nearly perfection. Would it not pay to breed to such a type? If any one could produce such animals with tolerable certainty there is a constant market and "price no object." Of course the expense would be in establishing the type, but when once this were done the reward would be great.

Abroad they have established a type, and instead of using a sire and dam of different breeds they use them of the same. Their "half-bred" stallions are so distinct that they reproduce their form and character with tolerable certainty, and with their "half-bred" mares turn out a breed of horses so similar that matching them in pairs is easy. Government at home does not interfere—it trusts to private enterprise, and four-fifths of our horses are mongrels. European Governments assist their subjects, and in fifty years have established breeds of harness horses, formed chiefly from our own stocks, which now successfully beat us in the home market.

Mr. C. W. Tindall writes on Breeding Hunters, and proposes the establishment of a *breed of hunters*. He says, "Why we hear so much about the breeding of hunters not paying is, that up to now, we have had no fixed type or principle of producing them. . . . . Hunters have been bred in every conceivable way; the dam bred no one knows how, the sire in most cases being a thoroughbred . . . . The result of this haphazard mating is that not one in twenty-five animals designedly bred for hunters answers the

expectations, pays the breeder, or passes life in the occupation for which it was originally intended." His remedy for this is to "treat the horse in the same way as the mare, and breed from 'hunter' sires as well as from 'hunter' dams, and so far fix a type. For that purpose select a stallion from the true hunter type, able to carry 14 or 15 stone to hounds over Leicestershire, with at least two crosses of thoroughbred blood in his veins, and whose dam was equally well bred and also capable of carrying weight."

It seems difficult to point to any flaw in this argument. We breed other animals strictly to type—to suit the purpose for which they are required—and why should we depart from this practice with hunters?

Whilst acknowledging the logical position taken up by Mr. Tindall, it will be well to look at the practical difficulties and see if they are not sufficient to account for the illogical methods of producing hunters. To carry out his plan he requires "a stallion of true hunter type able to carry 14 or 15 stone to hounds over Leicestershire, with at least two crosses of thoroughbred blood in his veins, and whose dam was equally well bred and capable of carrying weight." He also, we must add, would require well-bred, weight-carrying mares whose dams were equally well bred and capable.

Here is one difficulty not easily overcome. To be certain that you had these animals you would have to breed them, which would require, say ten years. It would be no use breeding the animals if they *only looked* like hunters. They would have to be tried and show courage, manners, pace, and jumping ability. Of course, *to fix a type* means breeding on a pretty large scale, with all the expense of careful selection and careful drafting. The mares to produce weight-carrying hunters would cost about £150 apiece. The difficulties are chiefly those of expense, and the unavoidable long delay before any return could be made for the expenditure. With a proper director I believe a breeding stud of weight-carrying hunters could be formed with certainty and success, but the treasurer for the first ten years should be a Government, or a millionaire philanthropist.

Hunters to carry 13 stone can be bred from thorough-breds entirely, and many men possessing a good hunter mare now speculate in a foal by a thoroughbred who could not possibly do anything towards forming a type. Failures predominate, but the loss is spread over many owners and not much felt by the individual. To found a type—to establish a breed of weight-carrying hunters is a grand idea and perfectly practicable, but very, very difficult.

W. H.

THE VETERINARY MUTUAL DEFENCE FINANCIAL STATEMENT,

From January 1st to December 31, 1891.

Cash Received.	£	s.	d.
Balance in Bank, January 1891, ...	159	19	9
Subscriptions in 1891	79	11	0
Bank interest, June and December ..	2	4	11
	£241	15	8

Cash Paid.	£	s.	d.
Cash overpaid into Bank, last settlement	3	9	6
Cash to G. Morgan, Secretary's expenses	3	4	0
Cash to Lawson Smith against J. H. Ferguson	54	16	2
G. Morgan, Secretary's expenses ...	0	13	3
G. Howden for Printing Rules ...	2	8	6
Hotel bill for use of room on several occasions	1	7	6
Cobbet and Wheeler's bill	0	6	8
Cash in Bank	157	19	6
„ „ hand	14	0	4
Stamps, wrappers, etc. (12 months). ...	3	10	3
	£241	15	8

Audited and found correct. January 8th, 1892, { Jno. B. Wolstenholme. Edwin Faulkner.

THE NATIONAL VETERINARY BENEVOLENT FINANCIAL STATEMENT,

From January 1st to December 31st, 1891.

Cash Received.	£	s.	d.
Balance in Bank, January 1891 ...	46	4	7
Cash in hand above date	0	10	0
Sir. F. Fitzwygram's donation ...	1	0	0
Four dividends, Mersey Docks ...	73	7	4
Bank interest, June and December ...	1	10	5
Two dividends, Corporation, Manchester	26	9	4
Cash in Mersey Docks	1900	0	0
Cash in Corporation, Manchester ...	900	0	0
	£2,949	1	8

Cash Paid.	£	s.	d.
Cash in Bank	148	1	8
„ „ Mersey Docks	1900	0	0
„ „ Corporation, Manchester ...	900	0	0
Stamps, Wrappers, etc.	1	0	0
	£2,949	1	8

Audited and found correct, January 9th, 1892, { Jno. B. Wolstenholme. Edwin Faulkner.

Thomas Greaves, *Hon. Treasurer.*

NATIONAL VETERINARY BENEVOLENT AND MUTUAL DEFENCE SOCIETY, 1891.

List of Subscriptions for the above year.

	£	s.	d.
Mr. R. C. Trigger	0	10	6
„ John Freeman	0	10	6
„ James Rowe	0	10	6
„ Wm. Shipley	1	11	6
„ B. Cartledge	0	10	6
„ R. Cartwright	0	10	6
„ W. H. Caton	0	10	6
„ C. Hartley	0	10	6
„ Wm. Carless	0	10	6
„ R. C. Edwards	0	10	6
„ Hy. Thompson	0	10	6
„ J. M. Axe	0	10	6
„ C. Sheather	0	10	6
„ E. Kitchin	0	10	6
„ Batt and Son	1	1	0
„ R. Reynolds	1	1	0
„ C. W. Elam	0	10	6
„ A. L. Gibson	0	10	6
„ W. Whittle	0	10	6
„ T. D. Lambert	0	10	6
„ F. G. Samson	0	10	6
„ E. Nuthall	0	10	6
„ Wm. Bowers	0	10	6
„ H. J. Hogben	0	10	6
„ A. H. Jacobs	0	10	6
„ J. W. Anderton	0	10	6
„ J. Scriven	0	10	6
Prof. Walley	0	10	6
Mr. J. Roalfe Cox	0	10	6
„ J. C. James	0	10	6
„ T. Ridler	0	10	6
„ J. Wolstenholme	0	10	6
„ J. H. Goodall	0	10	6
„ G. H. Leach	0	10	6
„ W. H. West	0	10	6
„ G. E. Bowman	0	10	6
„ G. Morgan	1	1	0
„ E. Beddard	0	10	6
„ T. Aubrey	0	10	6
„ C. Morgan	0	10	6
„ F. W. Wragg	0	10	6
„ F. Danby	0	10	6
„ F. J. Stanley	0	10	6
„ B. Russell	0	10	6
„ T. A. Frost	1	1	0
„ T. E. Auger	0	10	6
„ W. Woods	0	10	6
„ S. Locke	0	10	6
„ T. Barker	0	10	6
„ W. Roots	0	10	6
„ J. Storrar	0	10	6
„ T. A. Frost	0	10	6
„ E. Faulkner	0	10	6
„ G. A. Banham	0	10	6
„ Finlay Dun	0	10	6
„ T. Collins	0	10	6
„ W. F. Peacock	0	10	6
„ J. H. Ferguson	0	10	6
„ A. W. Mason	1	11	6
„ J. Woodger	0	10	6
„ T. D. Broad	0	10	6
„ J. S. Carter	0	10	6
„ A. T. Dollar	0	10	6
„ C. Moir	0	10	6
„ J. L. Perry	1	1	0
„ W. A. Field	0	10	6
„ R. Mackinder	0	10	6
„ G. Rugg	0	10	6
„ D. Charnock	1	11	6
„ O. G. Barrow	1	0	0
„ E. Woodger	1	11	6
„ T. Secker	0	10	6
„ T. Hopkins	0	10	6
„ C. Blackhurst	1	11	6
„ A. G. Barrow	0	11	6
„ Ball and Son	1	1	0
„ W. Dobie	0	10	6
„ J. & A. Lawson	1	1	0
Sir F. FitzWygram (donation)	1	1	0
Mr. H. Snarry	1	11	6
„ J. D. Overed	0	10	6
„ Isaiah Leather	1	1	0
„ T. A. Rudkin	1	11	6
„ Hy. House	1	11	6
„ W. G. B. Dickinson	1	11	6
„ F. Freer	1	11	6
„ J. B. Tutt	1	1	0
Prof. Williams	0	10	6
Mr. J. B. Taylor	0	10	6
„ G. A. A. Oliver	0	10	6
„ A. Over	0	10	6
„ T. Pratt	0	10	6
„ H. Olver	0	10	6
„ J. L. Barling	0	10	6
„ P. Taylor	0	10	6
„ A. W. Taylor	0	10	6
„ J. B. Tutt	0	10	6
„ J. Simpson	1	11	6
„ T. Barker	0	10	6
„ H. R. Perrins	1	1	0
„ J. Jackson	0	10	6
„ T. G. Chesterman	0	10	6
„ T. Greaves	0	10	6
„ T. W. Cave	0	10	6
„ J. H. Ferguson	5	0	0
„ H. D. Charlton	1	11	6
„ E. Morgan	0	10	6
„ O. T. Williams	1	1	0
	£80	11	0

The people of Paris have consumed within the year 21,221 horses, 229 donkeys, and forty mules, the meat weighing, according to the returns, 4,615 tons. At the 180 shops and stalls where this kind of food is sold the price has varied from 2d. a pound to 10d., the latter being the price of superior horse-steaks.

REVIEWS.

THE JOURNAL OF THE ROYAL AGRICULTURAL SOCIETY.

In the new quarterly number of the Journal are articles of interest to other readers than those agricultural. Members of the veterinary profession cannot well afford to neglect any subject of primary importance to agriculture—our mutual interests are too closely allied to permit such indifference. Mr. W. E. Bear in a paper on "The Future of Agricultural Competition" discusses the question of the competition from beyond the seas, in such commodities as grain, live stock, dairy produce, fruit, &c. He arrives at the conclusion that a hopeful view may be taken of this competition. Another article which has drawn a good deal of attention from the daily press is on "Profit-sharing in Agriculture," by Mr. Albert Grey. Mr. Jasper More, M.P., contributes an article on "Sale of Corn by Weight." The advantages which would be conferred upon both growers of and dealers in wheat, barley, and oats by the establishment of uniformity are so obvious as to need no argument. Last session a Select Committee of the House of Commons was appointed to consider the feasibility of establishing some uniform weight for grain. It is not easy to choose between the cental and the hundredweight, the former presents all the advantages of the decimal system, whilst the latter is a multiple of the stone—the most used weight in the kingdom. The American hundredweight is 100lbs., and the ton 2000lbs., an arrangement which seems to leave little to be desired on the score of simplicity and exactness.

The most interesting articles in the journal to the scientific man are those on "the nitrogen question." Plants, like animals, must have nitrogen, and the question is how most profitable to supply it. This requires other questions to be answered, such as—Do plants obtain their nitrogen from the air or from the soil, or from both? In what form is nitrogen assimilated by plants?

In 1886 Professor Hellriegel and Dr. Wilforth announced the results of some experiments they had made, which may be briefly described as follows:—

"They commenced a comprehensive series of vegetation experiments in pots, in which were grown agricultural plants of various families in washed quartz sand. To all the pots nutritive solutions, but containing no nitrogen, were added. To one series nothing else was supplied; to a second a fixed quantity of nitrogen as sodium-nitrate was added; to a third twice as much; and to a fourth four times as much. The result was that, in the case of the *Gramineæ*, and some other plants, the growth was largely proportional to the combined nitrogen supplied, whilst in that of the *Leguminosæ* it was not so. In the case of these plants—that of peas, for example—it was observed that, in a series of pots to which no nitrogen was added, most of the plants were

apparently limited in their growth by the amount of nitrogen which the seed supplied. Here and there, however, a plant growing under ostensibly the same conditions grew very luxuriantly; and, on examination, it was found that whilst no nodules were developed on the roots of the plants of limited growth, they were abundant on those of the luxuriantly grown plants.

In view of this result, they instituted experiments to determine whether, by the infection of the soil with appropriate organisms, the formation of the root-nodules and luxuriant growth could be induced; and whether, by the exclusion of such infection, the result could be prevented. To this end, they added to some of a series of experimental pots, 25 cubic centimetres, or sometimes 50 cubic centimetres, of the turbid watery extract of a fertile soil, made by shaking a given quantity of it with five times its weight of distilled water, and then allowing the solid matter to subside. In some cases, however, the extract was sterilised. In those in which it was not sterilised, there was almost always luxuriant growth, and abundant formation of root-nodules; but with sterilisation there was no such result."

The importance of these results induced Sir John Lawes and Dr. Gilbert to further investigate the matter, and their experiments form the basis of a paper on "The Sources of the Nitrogen of our Leguminous Crops."

The results of the experiments were:—

1. "When plants were grown under certain conditions of sterilisation and of enclosure, no gain from free nitrogen."

2. "Under non-sterilised conditions—in fact with suitable microbe-infection of the soil—there was very considerable fixation of free nitrogen."

3. "Without soil-extract and without nodules there was no grain of nitrogen; but with soil extract and with nodule-formation there was much gain of nitrogen."

In answer to the question—How is the fixation of nitrogen to be explained—the authors say "the alternative explanations seem to be:—

1. That under the conditions of the symbiosis (the presence of microbes in the nodules) the plant is enabled to fix the free nitrogen of the atmosphere by its leaves.

2. That the nodule-organisms become distributed within the soil, and there fix free nitrogen; the resulting nitrogenous compounds becoming available as a source of nitrogen to the roots of the higher plant.

3. That free nitrogen is fixed in the course of the development of the organisms within the nodules, and that the resulting nitrogenous compounds are absorbed and utilised by the plant."

Of these alternative explanations, they believe the balance of evidence to be in favour of the last, and they express a hope that the result of further experiments at Rothamsted, "more definite answers will be forthcoming to some of the admittedly still open questions in connection with this interesting and important subject."

"From this newly-recognised source of the nitrogen of our leguminous crops, it is possible that results of the highest practical importance in agriculture may eventually proceed. Indeed, in this same issue of the Journal, there is a brief paper entitled "Farming without Live-stock," in which Dr. Fream adduces some striking instances of the employment of leguminous crops as collectors of nitrogen, and of the useful practice of ploughing these in as green manure, and supplementing their effect by the addition of artificial fertilisers containing phosphorous, potash, and lime. Such methods have been successfully followed upon some of the soils of Germany, and are likely to be extended when farmers grasp the fact that, under certain circumstances, *they can get the nitrogen from the air for nothing.* This method of obtaining nitrogen from the air is known in France as *sideration.*

"In a paper on "The Nitrifying Ferments of the Soil," Dr. Munro makes clear much that has not hitherto been understood concerning the manner in which the nitrogen contained in farm-yard manure, shoddy, sulphate of ammonia, and many other nitrogenous fertilisers, is converted into the soluble nitrate of lime, in which form nitrogen enters the systems of plants, and thus supplies them with food. This conversion of nitrate was once thought to be an exclusively chemical change, but it is now shown to be the work of two microscopic organisms, one of which begins the change and the other finishes it. A fact thoroughly established in these several papers is that the soil is teeming with life,—that it is the abode of micro-organisms capable of being turned to useful ends by the ingenuity of the Agriculturist."

There is also an article by Prof. Brown which we need not notice here as we have made an abstract of it, which we trust will send our readers to the Journal to judge for themselves.

In conclusion we must acknowledge our indebtedness to the editor of the Journal for a critical *resumé* which has been most useful in enabling us to express one or two paragraphs better than our unaided knowledge would have permitted.

Gastric Calculi.

Our experience does not include the discovery of a calculus in the stomach of any animal, and we should be obliged by information bearing upon the point, as *The Lancet* in the following annotation states they are "common enough in animals":—

"A Gastrolith in Man.—Dr. Kooyker has reported in the *Zeitschrift für Klinische Medicin* another case of gastric calculus—a condition which, though common enough in animals, is so rare in man that so far only seven cases have been reported. Dr. Kooyker's case was that of a man fifty-two years old, in whose lifetime it had been impossible to make a positive diagnosis, though some neoplasm of the stomach was suspected. The patient died from exhaustion. At the *post-mortem* examination a concretion was found in the stomach, almost filling its cavity, which weighed 885 grammes and was eighteen centimetres in length. The microscopic examination resulted in finding starch, vegetable cells, chlorophyll, and vascular tufts, while hair and other animal elements were entirely absent."

EXTRACTS AND NOTES.

A REMARKABLE COINCIDENCE.

Two men frequently express the same idea about the same date but it is seldom the method of expression closely coincides. In the two extracts printed below we observe a very close similarity both in substance and in expression. There may be some simple explanation but until it is forthcoming our readers must be left draw their own inference.

THE AGE OF THE HORSE, Etc.,

By R. S. Huidekoper, M.D.

(Published in June 1891).

Excess of length of the crowns or portions of them is of rather common occurrence. As the upper molars are broader as well as longer than the lower ones, the lower jaw is obliged to have a lateral movement in order to grind against the whole table of the former. When the horse is fed under the ordinary condition of nature, finding coarse weeds, twigs, hard vegetable matters and resisting substances, as dirt, etc., mixed with its food, this lateral movement is rendered complete by the slowness and difficulty of mastication, and the teeth are kept worn evenly. When, however, the animals are given selected fine hay, cleaned oats and slops and mashes, easy of mastication, they use the jaws like a chopping machine, and all parts of the grinding surfaces are not brought into contact. Again, when horses, like cab horses, doctors' hacks, etc., are fed at irregular times and in a hurry, they masticate incompletely, give the jaws but little lateral movement, and the narrower, lower jaws wear only against the internal portion of the tables of the upper teeth. When from any cause, such as caries of a tooth, cementoma, disease of any kind or deformity, the animal chews more on one side than the other, the normal bevel of the teeth, throws the wearing surfaces from their natural position and while some portions are worn faster, others do not receive the proper amount of use. When one or more teeth have been partially destroyed or lost, the opposing teeth, finding lessened resistance, become excessive in length, and frequently irregular in shape. The irregularity of shape from any of the above causes is usually in the form of an increased bevel; only the internal surface of the upper molars is worn, causing the formation of a little ledge along their outer borders, this acts as a check to lateral motion of the lower jaw, soon prevents it altogether, and cause and effect soon react on each other. The internal borders of the lower teeth may become very long and stand up like so many arrow points, cutting the tongue, and even penetrating the hard palate.

The loss of the lateral motion also prevents the slight fore and back play of the arches of the teeth, and soon the anterior edge of the first molar above, and the posterior edge of the last molar below, grow into points, which may be very annoying to the animal. Disease of a molar in one jaw, or its absence from fracture or otherwise, is soon followed by complication in the opposing tooth of the other jaw.—*The Journal of Comparative Medicine, etc*

THE HORSE'S TEETH.

By George Fleming, C.B., L.L.D., F.R.C.V.S.

(Published in December, 1891).

Excess of length of the *crown* of the molars—the portion protruding from the jaw—is not at all an uncommon occurrence; and as the upper molars are wider, as well as longer, than the lower ones, the lower jaw is moved in a lateral direction—from side to side—in order to grind against the whole surface or table of the former. When the horse feeds under the ordinary conditions of a natural existence—eating coarse grass, twigs, and hard vegetable substances—this lateral movement is rendered complete by the slowness and difficulty of mastication, and the teeth are therefore worn evenly. When they are given selected fine hay, cleaned oats, and chopped food and mashes—all easy of mastication—the jaws are used just like a chopping machine, and all parts of the grinding surface are not brought into contact. Again, when horses are fed at irregular times and hurriedly, they masticate incompletely, and allow the lower jaw but little lateral movement; so the molars of that jaw wear only against the inner part of the tables of the upper molars.

When from any cause the horse masticates more on one side than the other, the natural level of the teeth is altered by these wearing surfaces being thrown on a new line; so that while some portions are worn faster, others may receive no wear at all—hence irregularity of shape. This irregularity is usually in the form of increased bevel—only the internal surface of the upper molars being worn—and this produces a sharp ridge or ledge along their outer margin, which wounds the inside of the cheek against which it projects; and as this acute border becomes more prominent, the pain experienced by the animal acts as a check to the lateral movement of the lower jaw, and may almost prevent it altogether, so that cause and effect re-act upon each other. The inner border of the lower molars may also become very long, and project upwards like so many spikes, which wound and lacerate the tongue, and even penetrate the roof of the mouth.

The diminution of the lateral motion also stops a slight front and back play of the lower jaw, that tends to keep the tables of the first and last upper molar level; so that the front edge of the former and back edge of the latter grow long, and cause increased annoyance.

Disease of a molar in one jaw—such as carious, fractured, or lost tooth—is soon followed by alterations in the opposite jaw.—*Live Stock Journal Almanac.*

(*Both authors illustrate with two woodcuts exactly alike.*)

ABORTION IN CATTLE.

An abstract of a paper by Professor Brown in the Journal of the Royal Agricultural Society.

Investigations into the nature and causes of abortion, which have been carried on for the last century by veterinarians over a large portion of the civilised world, bring one fact out prominently—viz. that abortion is a product of civilisation. Wild races, so far as can be ascertained, enjoy an immunity from the disease in the epizootic form. As the result of common causes, *i.e.*, violence, acute disease, exertion, excitement, or fear, abortion may be classed with other accidents to which animals are liable under all conditions of existence.

Epizootic abortion has steadily increased among our cultivated breeds of cattle. Cows of the

highest type of artificial excellence are most likely to suffer, for two reasons :—

(*a*) Want of constitutional tone 'and power to resist disease due to precocity of development.

(*b*) The use for breeding pedigree cows, which repeatedly fail to hold to their service.

Passing on to the consideration of the evidence which veterinary authorities have collected on the subject of abortion, one of the earliest writers (1786) on cattle, Clater, may be referred to. This author writes in very general terms. He speaks of abortion as one of the curses of the breeder, refers to some of the common causes, and speaks also of the epizootic character which the disease sometimes assumes. Even at that early period, it was clearly recognised that the affection did present the character of a contagious malady.

You att, in 1834, enters into details; he refers to the susceptibility of cows above that of other animals of the farm. After speaking of the common causes of sporadic abortion, accidents, climatic changes, certain kinds of food, violence, and excitement, he gives the history of a remarkable case which he quotes from the French veterinarian Chabert. A farmer at Toury, in France, had abortion among his cows for thirty years, before it came under the notice of this expert. On inquiry into the history of this case, it appeared that thirty years before, the farmer had purchased a cow from a distant part. The animal, on being brought into his herd, aborted, and other animals followed. Subsequently he lost a considerable number of calves in this way. From time to time he had animals removed, and filled up their places with fresh stock. Still, every year a certain proportion of the in-calf cows aborted, and this continued during the whole period of the thirty years which intervened between the purchase of the cow and the attendance of the veterinary expert Chabert. The advice given was to get rid of the whole of the stock, and start afresh. The farmer saw the reasonableness of this suggestion, adopted it, and abortion entirely ceased. This case was quoted in 1834, and it brings us very close indeed to the results of the researches which have taken place within the last few years.

Reference must next be made to a paper in this Society's Journal for 1851, written by Mr. Barlow.* This gentleman was at the time a demonstrator of anatomy in the Edinburgh Veterinary College, and there is no doubt that his untimely death about 1855 robbed the veterinary profession of a very distinguished ornament, and one of the most rising men of the time.

As to the symptoms of abortion, Mr. Barlow remarks that in many cases there are no warning symptoms. A little mass of decomposed mattter is found in the shed or field, and it is known that the cow has slipped her calf. In certain instances, however, there are premonitory signs which bear a distinct resemblance to those which occur in ordinary parturition, in the swelling of the external parts and indications of activity in the udder, and a glairy discharge from the generative organs.

This discharge has been made the subject of experimental inquiry, and the conclusion is becoming firmly established that in that discharge is contained the virus which is concerned in the propagation of the disease.

M. Bouley, for many years the Director-General of the veterinary schools in France, in his *Dictionary of Veterinary Medicine*, published in 1863—refers to the fact of abortion beginning with the introduction of a new cow—a very significant statement.

From M. Bouley we may pass on to Dr. George Fleming, who quotes Zundel to the effect that if septic bacteria are introduced into the vagina abortion follows. This statement is worthy of careful thought; because it is the first suggestion met with that the introduction of morbid material will induce the contraction of the uterus and probably cause the death of the fœtus by blood-poisoning as a consequence of this kind of inoculation. Dr. Fleming, at the conclusion of his article offers the suggestion that abortion is probably dependent on a specific virus.

It remained for another writer, M. Nocard, ten years later, to assert a positive opinion that this was the cause, and he added to that assertion a statement that he had discovered the virus on which the occurrence of this malady in the epizootic form depends.

The next author is Professor Axe. Although he does not deny that abortion may be contagious, his opinion on the point is expressed in the following quotation * :—

> Of abortion it may be said (1) that it is not known to be identified with matter possessing contagious properties; (2) that it has no fixed period of incubation; (3) that, except in occasional instances, it is unattended with fever; (4) that one attack predisposes to a second, and is usually followed by several in successsion.

These are qualities which do not belong to contagious diseases in general, and the question is still left open as to the disease arising from the action of either septic organisms or organisms possessing special pathogenic properties.

There is no doubt that the popular idea of the effect of ergoted grasses on the in-calf cow is based on the fact of its influence at the time of parturition. No evidence, however, has been advanced to prove that its action is manifested before that time, and experiments which have been made by feeding in-calf heifers on ergot have generally failed. At the Royal Veterinary College seven in-calf heifers were fed on grass in which ergot was abundant, and when the supply failed ergot was was mixed with their food, but no effect was produced. Very serious consequences have followed the consumption of rye-bread contaminated with ergot, and numerous persons have been fatally poisoned, but abortion was not among the characteristic signs of ergotism in the human being. Among

*R.A.S.E. Journal, Vol. XII., Part I, 1st Series, 1851, p. 64, 72.

* "Abortion in Cows; its Causes, Prevention and Treatment." By J. Wortley Axe. Page 31. (A. Napier, Seymour Street, Euston Square, N.W.)

cattle, severe outbreaks of ergotism in Kansas occurred some years ago, and great fatality was occasioned, but cases of abortion were extremely rare. Extensive outbreaks of abortion have occurred among cattle at a season of the year when ergot does not exist, and the worst that can be urged against ergoted fodder is that it may occasionally act as an irritant poison and cause abortion in the same way as other accidental causes may induce it from time to time.

Next there is a very valuable paper by M. Nocard, whose reputation is in itself a sufficient guarantee of the importance of his observations. He was employed by the French Government to make an inquiry respecting abortion which had prevailed amongst the Nivernais breed for many years. Indeed, at the time that M. Nocard commenced the inquiry, it was thought that the whole breed would be extinguished.

The conclusion at which he has arrived is that the disease results from the action of a specific microbe contained in the uterine membrane, in the intestines of the fœtus, and in the discharges which take place from the vagina. He goes on to say that, before this proposition can acquire an absolutely affirmative character, it is necessary that he should be able to produce the malady in healthy cows by the inoculation of the pure culture of the organisms, *i.e.*, by one or other of the microbes which he had isolated, and, further, he adds that these experiments, being indispensable for the definite solution of the question, are in course of being carried on.

M. Nocard gives in his paper an account of his means of prevention. He says :—

I have considerably simplified my methods. I have completely suppressed the vaginal and uterine injections, which provoke expulsive efforts. My experience, already great, has taught me that a beast which has once aborted will abort again or remain sterile. The best course is to isolate the animal immediately after the abortion, and to fatten her for the butcher. The practical prophylaxis is reduced to a very simple method :—

1. The weekly disinfection of the cow-stall and drains behind the cows with a solution of sulphate of copper, phenic acid,—*i.e.*, carbolic acid, or corrosive sublimate.

2. A daily washing, by means of a sponge saturated with the solution of corrosive sublimate, of the anus, the vulva, the perinæum, and the tail. The prescription used for this purpose is as follows :—

Rain water . .	10 litres, or about	10 pints
Corrosive sublimate .	10 grammes, „	2½ drachms.
Hydrochloric acid .	½ décilitre, „	1½ ounce.

His final remarks are—

As you will perceive, the procedure is very simple. It only requires care, exactitude, and perseverance. In reality it is useless to hope to see abortion cease immediately. During the first year it will be less serious; but it will show itself still, for all cows which are infected at the moment when the treatment is commenced will abort, almost as a certainty. But all will cease as by enchantment from the second year, for this treatment exactly followed prevents all new infection. The whole thing is essentially an affair of patience.

The latest authorities are Dr. Sims Woodhead, Professor M'Fadyean, and Dr. A. P. Aitken, who conducted an inquiry in Edinburgh in 1887.

The plan which these experienced gentlemen recommend for preventing abortion is practically the system adopted by M. Nocard—*i.e.*, rain-water containing common salt and bichloride of mercury in solution. They, however, advise injection into the uterus and vagina; whereas M. Nocard has decided that this system is no longer desirable, and has abandoned it in favour of the more simple plan to which I have referred.

Summary.

Cows which are bred and fed under highly artificial conditions are more predisposed to suffer from abortion than those which live under natural surroundings. Epizootic abortion is contagious, and should be dealt with by isolation of the diseased animals, and the regular use of disinfectants to the cows and also to the sheds or stables in which they are kept. On farms where abortion has been a frequent or constant occurrence for some time, the disinfection recommended by M. Nocard should be carefully and regularly adopted and continued for at least two years. When a new outbreak occurs, *i.e.*, in sheds which have been free from the disease for some time, and especially when a newly purchased cow is attacked, the animal should be at once removed, and the system of disinfection recommended should be at once commenced, and continued until all the cows have calved. A bull which has served a cow soon after abortion is likely to communicate the disease for some time to other cows. Finally, it is necessary to remind the stock-owner that the plague of abortion is not likely to be completely extirpated unless the preventive measures are steadily and accurately applied as directed.

G. T. Brown.

ROYAL VETERINARY COLLEGE V.M.A.

The first meeting of the above Society, held this session, took place in the theatre of the College at 6.30 p.m. on Wednesday, Jan. 13th, 1892; Mr. F. L. Clunes in the chair.

Some microscopic slides of cultivation of anthrax from spleen of sheep, and a morbid specimen of a horse's leg which had undergone gelatinous degeneration after being unnerved, were introduced; also a well marked specimen of tuberculosis in the lung of a horse.

An essay was read by Mr. H. W. Dollar on the Pathology of Parturient Apoplexy? Mr. Dollar commenced by an allusion to a pamphlet on the subject by Dr. Harms, late Prof. of Cattle Pathology at the Hanoverian Veterinary School. Parturient Apoplexy is a disease undoubtedly one of the results of domesticaton, as it is never found in animals in a state of nature. It is difficult to understand why it should still be a pathological problem as this disease prevails in all European countries and has been well-known since the commencement of this century. It is purely a bovine disease and usually occurs after a rapid and easy delivery; the danger increases as the cow arrives towards adult age, and decreases again as old age approaches. In those

few cases in which milk fever is diagnosed before calving, or at some considerable time after parturition, Dr. Harms is of opinion that the symptoms shown are those of inflammation of the cord and its membranes, or of acute hydrocephalus: he records the case of a young bull which presented the exact symptoms of milk fever whilst suffering from hydrocephalus.

Many observers, amongst whom are Williams, Bragard, and Noquet (the latter also found inflammation of the cord in the lumbo-sacral region with the arachnoid fluid of a red colour), found in their *post-mortem* examinations that the brain and spinal cord were congested.

SCHMIDT says that the exciting cause is due to pressure on the whole of the brain caused by the sudden mechanical flux of blood at the time of calving.

Professor SIMONDS regards it as "true apoplexy" due to the act of parturition, and attributes the disease to nervous inhibition of the mammary gland preventing the fatty matter from being effectually eliminated from the blood, thus changing the character of the fluid and probably its action thereby over the whole nervous system.

The theory of Dr. Harms is that the disease is due to the presence in the blood within the vessels of bubbles of atmospheric air. This is introduced into the system by aspiration of the uterine veins, which takes place at the time of separation of the placenta with rupture of the vessels which do not at once close, air having at the same time gained access to the uterus. *Re* anœmia of the brain, he points out that after death the arteries and capillaries always empty themselves into the veins. He goes on to state that his *post-mortem* examinations were made immediately after death, so that the air bubbles could not be the production of gas in the vessels. It is a curious fact that the uterus, after a rapid delivery with the aid of abdominal pressure, contracts but very little or not at all.

Mr. Dollar here described the *modus operandi* of Dr. Harms experiments.

The Morbid Anatomy (according to Dr. Harms) is as follows:—

Brain: Dura mater healthy.

Pia Mater, through the presence of air under it, is raised in blisters; its arteries contain only a little blood here and there in which air bubbles are present; its veins present quite a dotted appearance owing to these bubbles.

The Ventricles contain clear serum in abnormal quantities.

Spinal Cord has similar appearances to those of the brain.

Pericardium shows ecchymosis and contains a yellowish serum.

Heart: Relaxed and well filled. Air bubbles in coronary veins. Cardiac muscle has the appearance of having been boiled.

Lungs: Œdematous and emphysematous.

Stomach and Intestines: Wall showed no marked change

Liver, Spleen and Kidney: Anœmic.

Bladder: Normal.

Uterus: Not normally contracted; very anæmic. Submucous tissue coat infiltrated with serum and contains air bubbles. Cotyledons very pale and generally showing wounded surfaces. In the blood vessels of the uterus, particularly in the large veins, Dr. Harms has found in every case the air bubbles in large quanties.

An animated discussion followed, during which the President stated that under the Chloral Hydrate Treatment 75 per cent. of the cases recovered.

Votes of thanks to the Essayist and Chairman terminated the proceedings.

F. HOBDAY, *Assist. Sec.*

Neglecting to Give Notice of Sheep Scab.

A farmer at Belton was summoned for an offence under the Contagious Diseases (Animals) Act, for neglecting to give notice that sheep belonging to him were affected with sheep scab. For the prosecution it was alleged that at the defendant's sale a certain number of sheep were sold which were found by the purchaser a few days after to be suffering from scab. A veterinary surgeon who inspected the sheep ten in number—said he found the whole of them diseased, and in his opinion they had been infected for three months at least. A servant of the defendant's, who had sheared the sheep, said that at that time they had scab on the shoulders and hips. For the defence it was contended that the defendant had no knowledge that scab existed among his sheep. A neighbouring farmer was called who said his land adjoined the defendant's and as the fence was not good his sheep and the defendant's got mixed up together, and he never saw anything to make him believe that defendant's sheep had scab. Other farmers gave similar evidence. An auctioneer who sold sheep for the defendant said he was at the sale, and all the sheep looked perfectly healthy. If scab had existed three months he should have expected the sheep to be smothered, and everybody would have noticed it. The defendant said he had no knowledge of any such thing as scab amongst his sheep. They were perfectly open to the inspection of visitors three hours before the sale. The magistrates ultimately dismissed the summons.

A Graceful Tribute.

The Lancet for Jan. 2 says, "Those who know Professor M'Fadyean, while gratified with his appointment to the Royal Veterinary College, London, are grieving over the prospect of losing him from the inner circle of more active workers in Edinburgh. Professor M'Fadyean, although he has devoted himself to veterinary science, is a graduate both in medicine and science of the University. No man in Edinburgh has a higher reputation amongst those who know him as an honest and reliable worker. And those who have had occasion to seek his assistance and help know how ready and willing he always is to give them. His appointment to the London Veterinary College is the highest tribute that could be paid to the value of the work he has done in veterinary pathology.

The Bacteriology of Influenza.

Our Berlin Correspondent writes that Dr. Richard Pfeiffer, director of the scientific department of the new Koch Institute, has succeeded in isolating an extremely small, rod-shaped bacillus, which he finds to be the constant companion of influenza, and which is communicated by the respiratory organs. The reported discovery cannot, however, be received with entire confidence, inasmuch as it is well known that there is not one influenza bacillus, but many. Some investigators have, like Babes, isolated all the bacilli and cocci observed in the secretion of patients

suffering from influenza, and in the organs of persons who have died from the affection. These scientists detected the presence of a considerable number of microbes. Some of these bacilli were pathogenous, and killed the animals inoculated with them; but it was impossible to say which particular microbe among the number was the true morbid agent in influenza. Some investigators consider the bacillus they found more abundant than others in the bronchial secretion to be the active agent; others have sought for a special microbe in the blood, and have described a hæmatozoon resembling that of intermittent fever described by Laveran. None of these researches have been confirmed by other scientific workers, and the atmosphere of doubt that envelops the results of Dr. Pfeiffer's experiments can only be cleared away by a careful examination of the details. Six successful inoculations cannot be accepted as conclusive proof that the real cause of so rapid and so contagious a disease as influenza has been discovered.—*British Medical Journal.*

The Cost of Negligence on a Farm.

After all, the best thing about "profit-sharing" in agriculture, according to Mr. Albert Grey's experience, is that it "puts the labourer's heart into the work." What is lost to the farmer through careless and indifferent hands only those who have had practical opportunities of observing can estimate. "If my gate-posts were a hundred yards apart," said a Northumbrian farmer to Mr. Grey, "my men would run their carts against one of them, sure enough." In ploughing the lea to make an even seed bed for the oat crop, according to the Northern custom, a bad or careless ploughman at the present price of oats will, it is estimated, cause a loss of from one to two pounds an acre—in other words, will double the rent. In the stackyard, again, the bad winter inflicts loss in a variety of ways. In the management of animals the mischief is still more grave. Every farmer knows of some valuable animal which has been lost through idle carelessness. After a hot piece of work a favourite mare has been left to "starve" exposed to the north-east wind, with the result that she dies of inflammation, and straight fly £70 to £80 out of the pocket of the farmer. "At Howick (says Mr. Grey), in the course of a not very long period, four or five horses which had been employed in dragging fallen timber out of the plantations have been lost through the carelessness of the hinds who neglected to make them fast, and thus allowed them to fill their stomachs with the poisonous yew."

Hydrophobia in 1890.

A notable decrease in the number of deaths from hydrophopia is observed by the Registrar-General. The deaths from this disease had been 30 in 1889, and had averaged 24 annually in the three years 1887-8-9, but there were only 8 in 1890, and fewer than in any year since 1868. This decrease was coincident with, and doubtlessly due to, a similar decline in canine rabies; the number of dogs returned to the Board of Agriculture as afflicted by this disease having fallen from 312 in 1889, and an average of 230 in the three years 1887-8-9, to 1 9 in 1890. It seems impossible, the Registrar-General says, not to associate this remarkable decline with the application of the Muzzling Order by the Board of Agriculture, from 1st January, 1890, to those counties in which rabies was known to have been prevalent. These were the counties in which hydrophobia has been most common, namely, the groups of counties of which London and Lancashire are respectively the centres.

It seems a pity that the statistics for Ireland are not made more public in this country. Rabies flourishes in the Emerald Isle, and dogs to the number of many hundreds per month pass *without regulations* between there and here.

Horse-shoe Inventors.

Few people are aware of the immense amount of interest taken in horse-shoeing by persons who know nothing about it. Every year the Patents Office registers applications for "improvements in horse-shoeing" to the number of two a week. The value of these may be estimated by the fact that not one a year ever reaches the stage of manufacture. We have just seen a circular, issued by some one interested in a nailless shoe, which contains a paragraph too rich to be lost. Where do they think the nails are driven?

> "The use of nails, particularly in horses frequently re-shod, not only injures and brings about an unsound condition of foot, but also renders it **unnaturally sensitive.** The horse, while going, trips and strikes its shoe against the ground; the concussion, or 'jar,' is transmitted **by the nails** to the inner and more tender parts of the foot, and a stumble, frequently a fall and broken knees, is the result, while this, which is often the real reason of many such an accident, is not even suspected."

Why "Pleuro" Prevails.

A paragraphist in *The New York Herald* has made an original discovery. Pleuro is not half so bad here as is believed. Compensation is a gigantic fraud. Farmers cheerfully report any disease, the cows are killed and *double their value* paid without question!!

The correspondent who sends us the following extract treats it as a serious charge. He should consider its source. Penny-a-liners must live, and cannot always rely on sea serpents or big gooseberries. Some variation must be allowed:—

"The English farmer has, in one respect, at least, nothing to learn from his American brother. As everybody knows, there is an embargo enforced in Great Britain against American cattle. Every American steer landed in this country must be slaughtered within ten days. The primary object of this embargo was to keep out pleuro-pneumonia. Well, that was all right, as long as "pleuro" was rampant in the United States. But it is no longer rampant there. It is a good deal more rampant

here, and so long as the Agricultural Department can be hoodwinked, it is likely to remain so. If "pleuro" breaks out in a herd in Britain the owner must so notify. Intelligence of the situation is sent to a Government inspector. That official looks the herd over, and picks out the doomed beasts. Does the farmer wring his hands and drop tears as large as gooseberries? He does not. He looks quite cheerful. He tries to look grave, but it is difficult to look grave when you know that a paternal Government will give you £20 for a cow that is not worth much more than half that amount. This partly explains the prevalence of pleuro-pneumonia in England just now."

Butter from Australia.

Dairy farmers are now threatened with a formidable competition in the butter market from a hitherto unexpected source. Only a few days ago a P. and O. steamer from Victoria landed 100 tons of Australian butter in this country. It was butter of excellent quality, and it fetched a wholesale price of from elevenpence to thirteenpence a ponnd. The consignment is no doubt a profitable one to Australian farmers or their merchants. For many years now butter has been a drug on the Sydney market and elsewhere, and settlers have found a difficulty in disposing of it even at a loss. It is said this venture, having proved undoubtedly successful, will lead to enormous quantities of Australian butter being shipped hitherward.—*Notts Daily Guardian.*

Veterinary Surgeon Missing

A sad incident in connection with the severe snowstorm of last week is reported from the North. Mr. Shivas, veterinary surgeon, Invergordon, left his home on Friday with a horse and trap, and has not yet been heard of. His horse came home, and the vehicle was afterwards found stuck at Rosskeen Bridge, but there was no appearance of the owner. It is supposed that he has perished in the snow.

North Brit. Agriculturist.

The Beasts of India.

Mr. Kipling in his book says in reference to the charitable refuges for animals in India, they are not hospitals in the true sense, for ailments are not treated; but simply refuges for halt, maimed, diseased, and blind creatures for whom nobody cares. Until the late Mr. J. H. Steel, principal of the Bombay Veterinary College, took compassion on the inmates and regularly visited the place, no attempt had ever been made to alleviate their sufferings. So you see there creatures with unset broken limbs, with hoofs eighteen inches long, and monstrous wens. The dogs, as I remember them twenty years ago, were a heart-breaking sight, confined, with nothing to do but fight, and all afflicted with one equal misery of mange.—*St. James's Gazette.*

CORRESPONDENCE.

SERVING ON JURIES.

DEAR SIR,

I am very much disappointed to find there is no mention in the draft petition of our exemption from the serving on juries, and I decidely think we have quite as much right to such exemption as a pharmaceutical chemist, who can easily at all times obtain a substitute, which in our case is frequently impossible. I cannot for the life of me see upon what grounds it was ever refused. Surely 3000 could not make much difference spread all over the United Kingdom.

Hoping to see the clause introduced before the said petition is presented.—Yours obediently,

A. L. G.

[Exemption from serving on juries cannot be obtained by a Charter—only by an Act of Parliament.—ED.]

SCOTCH MEMBERS OF COUNCIL.

SIR,

I am willing to admit we have four members of Council for Scotland, but I distinctly said only one *practitioner*. You must see what a great difference there is between practitioner and Principal of a School. In Scotland we are honoured by having three Veterinary Colleges—you have only one in England. Now Sir, who elects the Principals of Schools to the Council? Chiefly their old pupils and friends. Half the students in Scotland are not natives and will not practise in this part of the Kingdom. If a principal of a school did not get a single vote in Scotland he would still be returned to Council by English and Irish votes, and then you would say "he represents Scotland. If we had territorial districts we could elect our practitioners, and the principals of schools might be left to be elected by the residents of other parts.—Yours etc.,

SCOTUS.

[Does our correspondent really mean that "the principals of schools" *do not represent* Scotland? Clearly if we ever have territorial electoral districts we must limit the candidates to residents in each district or we shall have four practitioners from Scotland as well as *three Principals elected by Irish and English votes.* Really this is too subtle and difficult a question for practical politics.—ED.]

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—Messrs. H. Sessions, A. L. Gibson, R. H. Potts, W. H. Brooke, E. H. Leach, W. H. Bloye, J. G. Clayton. "American Veterinary Review."

Original articles and reports should be written on one side only of the paper, and auth enticated by the names and addresses of the writers, not necessarily for publication.

We shall be obliged by early intelligence of all matters worth bringing under the notice of the profession, and thankful to any friends who may send us cuttings from local papers, containing facts of interest.

Communications for the Editor to be addressed 20 Fulham Road, S.W.